PHIL-22706

PHASE II ENVIRONMENTAL SITE ASSESSMENT

LEMON RIDGE GARDEN, INCORPORATED
PHILADELPHIA, PENNSYLVANIA

EPA TARGETED BROWNFIELDS ASSESSMENT TASK ORDER NO. 1
EPA CONTRACT NUMBER EP-W-07-098
TETRA TECH PROJECT NUMBER 01703

Tetra Tech, Incorporated
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APRIL 2009

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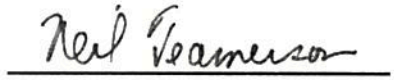

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QUALITY ASSURANCE MANAGER
TETRA TECH, INC.
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LIST OF ACRONYMS

ASQAB	Analytical Services and Quality Assurance Branch
ASTM	American Society of Testing and Materials
CLP	Contract Laboratory Program
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
Etech	Environmental and Safety Solutions, Inc.
FEMA	Federal Emergency Management Agency
FSP	Field Sampling Plan
FOL	Field Operations Leader
HASP	Health and Safety Plan
HDPE	High Density Polyethylene
LRGI	Lemon Ridge Garden, Incorporated
MSC	Medium Specific Concentration
PADEP	Pennsylvania Department of Environmental Protection
PAH	Polycyclic Aromatic Hydrocarbon
PID	Photoionization detector
ppm	parts per million
QAPP	Quality Assurance Project Plan
RAS	Routine Analytical Services
REC	Recognized Environmental Condition
RLSC	Regional Laboratory Sample Coordinator
RSL	Regional Screening Level
SAP	Sampling and Analysis Plan
SATA	Site Assessment Technical Assistance
SOP	Standard Operating Procedure
SSO	Site Safety Officer
SVOC	Semi-Volatile Organic Compound

LIST OF ACRONYMS (continued)

TAL	Target Analyte List
TCL	Target Compound List
TOPO	Task Order Project Officer
Tt	Tetra Tech, Inc.
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

Etech Environmental and Safety Solutions, Incorporated (Etech) was tasked by the United States Environmental Protection Agency (EPA) to conduct a Phase II Environmental Site Assessment (ESA) for the Lemon Ridge Garden, Incorporated (LRGI) site in Philadelphia, Pennsylvania.

The site is a vacant lot approximately 0.3 acres in size. The site consists of eight tax parcels (nine street addresses) which were formerly used for residential and/or commercial use. All structures that once occupied the site have been demolished. Past uses of the site also included dumping of bricks for resale, use as a junkyard, and storage of trucks and excavating equipment. The site is currently owned by LRGI, which plans to redevelop the site into a community garden.

The Etech team completed a Phase I ESA, which recommended collection of surface and shallow subsurface soil samples to characterize potential impacts from construction debris disposed on site and possible oil spills from vehicle maintenance and storage of abandoned vehicles and equipment at the site.

A Phase II ESA was performed in December 2008 to collect surface and subsurface soil samples for laboratory analyses. Results, when compared to residential screening criteria (EPA Region 3 Screening Levels and Pennsylvania Department of Environmental Protection Medium Specific Concentrations), show elevated levels of polycyclic aromatic hydrocarbons in all of the surface and subsurface soil samples, and elevated levels of metals in most of the surface and subsurface soil samples. When compared to industrial benchmarks, contamination was less widespread and fewer exceedances were noted; however, contamination (primarily lead and benzo(a)pyrene) was present in surface and subsurface soils. It should be noted that no imminent risks were identified during the Phase II ESA.

Lead and PAHs are common contaminants found in urban settings as a result from burning fossil fuels, and in the case of lead, use of lead-based paint. The conditions at the site may not be significantly different than other properties in the surrounding area. Results from the site are not unusual for urban environments and may not be attributable to site activities; however, site activities could be a contributing factor to the levels of contaminants detected at the site. The elevated levels of lead and PAHs at the site may present potential adverse health risks as determined by results above screening criteria.

Based on the results of the Phase II ESA, a risk assessment should be prepared to evaluate health risks to potentially exposed populations at the site. This risk assessment should consider future site use of the site as a community garden. The samples collected during the Phase II ESA are sufficient for use in the risk assessment, and additional sampling or other data collection activities would not be required at this time. Results of the risk assessment will be used to determine if remedial actions are needed at the site.

1.0 INTRODUCTION

Etech Environmental and Safety Solutions, Incorporated (Etech) was tasked by the United States Environmental Protection Agency (EPA) under Contract No. EP-W-07-098 to conduct a Phase II Environmental Site Assessment (ESA) for the Lemon Ridge Garden, Incorporated (LRGI) site in Philadelphia, Pennsylvania. The Etech team, including Tetra Tech, Inc. (Tt), performed this Phase II ESA under Targeted Brownfields Assessment (TBA) Task Order No. 1.

The Etech team prepared a Phase I ESA in September 2008 to identify, to the extent feasible, Recognized Environmental Conditions (RECs) at the subject property (Etech, 2008a). As defined in the American Society of Testing and Materials (ASTM) Standards, an REC consists of "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property."

The Phase I ESA was conducted in accordance with the scope and limitations of ASTM Standard Practice 1527-05. Based on the results from the site reconnaissance, RECs were not observed. However, based on historical information and interviews with the current property owners and individuals with knowledge of the site use, surface soil and shallow subsurface soil contamination may have resulted at the site due to past operation as a junkyard. Waste oils were reported at the site and junked equipment and vehicles may have contained and leaked hydraulic fluids, lubricants, and other petroleum products. These substances are potential sources of polycyclic aromatic hydrocarbons (PAHs) and petroleum-related volatile compounds such as benzene, toluene, ethylbenzene, and xylenes (BTEX).

Based on the planned future use of the site as a community garden, which could result in direct exposure to possible contaminants from past operations, a Phase II ESA was recommended to identify if soil contamination is present in surface and shallow subsurface soils at the site (Etech, 2008a).

The Phase II ESA field investigation was performed in December 2008 in accordance with the procedures detailed in the Sampling and Analysis Plan (SAP) for the site (Etech, 2008b). The SAP, which included the Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) for the Phase II ESA, identified sampling locations, data quality objectives, analytical requirements, and standard operating procedures for field activities. The Phase II ESA was also performed in general accordance with ASTM Standard Practices for Environmental Site Assessments: Phase II Process E-1903-97 (ASTM, 2002).

2.0 SITE LOCATION AND DESCRIPTION

The site is located at the intersection of Ridge Avenue and Mt. Vernon Street in Philadelphia, Pennsylvania (Figure 2-1). The site consists of several parcels including 1301, 1305, and 1307 Mt. Vernon Street and 1302, 1308, 1310, 1312, and 1314-1316 Ridge Avenue. Parcels 1304 and 1306 Ridge Avenue, which are surrounded by the site, are not owned by LRGI (Figure 2-2). A portion of the 1312 Ridge Avenue parcel is being used by a neighboring property for recreational purposes (patio). No known junkyard activities have taken place at this portion of the 1312 Ridge parcel.

In addition, two parcels (1304 and 1306 Ridge Avenue) are surrounded by the LRGI site. These parcels are vacant and were previously used for residential and/or commercial purposes. Photographic evidence also shows that these parcels were used for the same purposes (i.e., junkyard) as the LRGI site. The City of Philadelphia's Board of Revision of Taxes records shows David Arty as the owner of 1304 Ridge Avenue and Eugene Guy as the owner of 1306 Ridge Avenue. According to information provided by LRGI, Mr. Guy is deceased.

Key data for the site is presented below:

Owner:	Lemon Ridge Garden, Inc.
Address:	Ridge Avenue and Mt. Vernon Street (Various parcels) Philadelphia, Pennsylvania
Parcel ID:	Eight parcels recorded in City of Philadelphia Deed Book 1605, page 156: 141274700, 141274900, 141275000, 141348500, 141348800, 141348900, 141349100, and 141349200
Latitude / Longitude:	39° 57' 49.7" North / 75° 9' 32.4" West
Elevation:	54 ft. +/- above sea level
Size:	13,074 square feet
Structure(s):	One advertising billboard
Utilities:	Water: Area serviced by Philadelphia Water Department Sewer: Area serviced by Philadelphia Water Department Electricity: Area serviced by PECO Gas: Area serviced by Philadelphia Gas Works

The site, located in the lower portion of North Philadelphia, consists of two sections of adjoining vacant lots owned by LRGI separated by two privately owned vacant lots. With the exception of an advertising billboard, no structures are located on the site. The area of the parcels combined is approximately 13,047 square feet.

The site is enclosed by chain link fence along the Ridge Avenue and Mt. Vernon Street sides of the site, by the Septa Substation and residential properties along the western side, and the building occupying 1318 Ridge Avenue along the northern side of the site. Access to the site is restricted by these features; however, two fence gates allow access to the site from Ridge Avenue. The surface of the site contains grasses and weeds, remnants of an asphalt driveway, and other debris. The surface and near subsurface contain bricks, wood, and other debris believed to have originated from the structures that occupied the site prior to their demolition. The northeastern corner of the site is currently used for storage by LRGI. Materials stored by LRGI include a water tank, an empty drum for containing litter, and bags of soil. Appendix A presents photographs of current site conditions.

2.1 PROPERTY USE AND HISTORICAL INFORMATION

2.1.1 Current Property Use

Information on site history and use was obtained from interviews with a representative of LRGI; owners of adjacent/neighboring properties; and a review of City of Philadelphia deed records. The site currently consists of vacant land which is planned for redevelopment as a community garden. The parcels composing the site were donated to LRGI by Mr. Byron Prusky (property title vested as Section 89, Inc.), the site's former owner, in December 2005. The site had been owned by the Prusky family since the mid 1940's and had been used as a remote storage lot for cars associated with the family's nearby car dealership until the mid 1970's.

2.1.2 Past Property Use

Prior to the 1940's, the individual parcels composing the site were used for residential and commercial purposes. Business operations included grocery and other food stores, glass sales and repair, and auto supply sales. The residential and commercial structures were demolished in the late 1940's or early 1950's. It was common practice at that time during demolition activities to fill in the basements of the structures with the demolition debris rather than disposing materials off-site.

From approximately the 1970's until the mid 1990's, the site was leased; however, no detailed information related to the tenant is available. It is believed that the tenant used the site to dump masonry debris and clean recovered bricks for resale. In the 1990's, the site was allegedly used as a junkyard for old vehicles and for storage of miscellaneous construction equipment. From 1997 to October 2005, the site was leased to an excavating company for storage and maintenance of equipment. Aerial photography does not provide sufficient detail to evaluate the extent of scrap material at the site; however, historical

photographs (Appendix B) provide some visual evidence of the site's use as a junkyard. The majority of the vehicles and scrap metals were removed by the former tenants upon their departure.

When LRGI received ownership of the site, an abandoned piece of excavating equipment, approximately 100 tires, two 55-gallon drums containing waste oil, and several 5-gallon pails of waste oil remained on the site from the prior tenant. In 2006, LRGI arranged for the removal of these materials. The waste oil was transported to a City of Philadelphia facility during a community hazardous materials drop-off program; however, no documentation is available that identifies the type of material and final disposition of the waste. There are no regulatory records indicating environmental concerns related to this operation.

LRGI arranged for removal of asphalt from the paved areas of the site and the removal of surface debris, including abandoned excavating machinery and other scrap materials. The excavating machinery was sold on eBay. The tires were removed by the City; this removal was facilitated by Councilman Daryl Clarke's office. The debris, which was mainly wood, was removed by Hugh Gillespie and Sons Contracting as part of LRGI's sidewalk replacement project. Gillespie also removed much of the blacktop that covered an area at 1312-1316 Ridge Avenue.

A review of City of Philadelphia records did not show the presence of any environmental liens against the site.

2.2 ENVIRONMENTAL SETTING

This section presents a description of the environmental setting pertaining to the site and regional features including topography, ground water, surface water, and geology. Also included is a review of local, private, and municipal water supplies.

2.2.1 Site Setting and Topography

Topography

The site is situated at approximately 54 feet above sea level. The surrounding area is relatively flat; however, surface water drainage from the north and west flows towards the site and discharges to the south and east.

Surface Water Characteristics

The site is situated approximately 1 mile east of the Schuylkill River and 1 mile west of the Delaware River. According to the Federal Emergency Management Agency (FEMA) Flood Electronic Data, the site is not located within the 100-year floodplain. According to National Wetland Inventory Maps, there are no wetlands on or adjacent to the site. Surface water drainage from the site would be expected to flow to nearby storm drains and be directed to the City of Philadelphia's storm water drainage system.

Geology and Soils

According to US Department of Agriculture's Soil Conservation Service, the surficial soils in the vicinity of the site are classified as Urban Land, which is soil modified by the disturbance of natural layers with the addition of fill.

Site-specific geological information is not available, but the site vicinity is underlain by the schist of the Wissahickon Formation. Well logs from wells constructed in the early 1900's near the site do not contain data indicating depth to bedrock or well yields.

Groundwater Characteristics

Site-specific groundwater flow direction was not available during the course of this investigation. However, regional groundwater flow would be expected to follow topography and flow to the east towards the Delaware River.

Water Supplies

Potable water in the site vicinity is supplied by the Philadelphia Water Department which utilizes surface water sources to provide service to over 1.5 million customers in Philadelphia and parts of Lower Bucks County, Pennsylvania.

3.0 PHASE II ACTIVITIES

3.1 FIELD INVESTIGATION

The Etech team conducted a Phase II investigation of the LRGI site on December 22, 2008. Site conditions had not changed since the Phase I ESA site visit conducted in July 2008. The investigation consisted of surface and subsurface soil sampling. Subsurface soils were collected using a backhoe to excavate shallow test pits. The field investigation was performed in accordance with the procedures detailed in the SAP approved by EPA on December 10, 2008 (Etech 2008b).

All samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), TCL semivolatile organic compounds (SVOCs), and target analyte list (TAL) metals. Sample analysis was arranged by the EPA's Contract Laboratory Program (CLP) utilizing EPA approved laboratories and CLP methods. Data validation was conducted by EPA Region 3's Environmental Services Assistance Team under the direction of EPA Region 3's Environmental Services Center.

Photoionization detector (PID) readings were also recorded at each sample location.

3.1.1 Soil Sample Collection

One surface and one subsurface soil sample were collected from each of the eleven sample locations shown on Figure 3-1. Two field duplicate samples were also collected for quality assurance purposes. The surface soil samples were collected from the top 6 inches of soil. The subsurface soil samples were collected with the aid of a small backhoe at the location of the surface soil sample (with the exception of one sample location). The subsurface soils were grab samples collected from each test pit at a depth of 2 to 3 feet below grade. Each excavation was approximately 3 to 4 feet long by 2 feet wide by 4 feet deep. All excavated materials were used as backfill at the conclusion of the sampling activities at each location. Photographic documentation of the test pits is included as Appendix A. Sample logs are included as Appendix B.

At one subsurface soil sampling location (SB-07), backhoe refusal at a depth of 2 feet below grade resulted in a field decision to move the location of the subsurface sample. The refusal may have been due to the presence of a building foundation or dividing wall between two former structures at the property. An alternate location within the same parcel approximately 10 feet from the original location was selected and a sample was collected. VOC samples were collected using Encore® sampling devices and 8-ounce glass jars were used for collection of other analytical parameters. Samples were transferred

directly to the jars using clean, disposable trowels. Observations from the sampling activities and analytical results are presented in Section 4.0.

4.0 PHASE II INVESTIGATION RESULTS

4.1 SOIL SAMPLING OBSERVATIONS

Surface soil samples were collected from the top 6 inches at 11 locations throughout the site. At least one sample was collected from each tax parcel as shown on Figure 3-1. Surface soil samples were gray or brown silty sand mixed with gravel. Brick and/or glass fragments were also present at the majority of sample locations. There were no elevated PID readings, evidence of soil staining, or odors at any of the surface soil sample locations.

Subsurface samples, collected at depths from 2 to 3 feet, were generally brown sandy silt to silty sand with brick fragments. One subsurface location was moved approximately 10 feet due to the presence of building materials which may have been a foundation from a previous structure. No elevated PID readings were recorded at any of the test pit locations. No soil staining or odors were observed in subsurface soils exposed during excavation of the test pits. There was no evidence of hazardous materials, including building debris potentially containing lead-based paint or asbestos-containing material, observed in the test pits. Photographs from the field investigation are included in Appendix A.

4.2 SAMPLE RESULTS

Sample analyses consisted of TCL VOCs, TCL SVOCs, and TAL metals. Results were compared to Pennsylvania Department of Environmental Protection (PADEP) Medium Specific Concentrations (MSCs) (PADEP, 2001) and EPA Region 3 Regional Screening Levels (RSLs) for Chemical Contamination at Superfund Sites (September 2008). The selected screening criteria are for residential exposure. Appendix C presents a summary of all data compared to the screening criteria. Appendix D provides the data validation report. A discussion of the results is presented below.

4.2.1 Surface Soils

Organics

There were no VOCs detected in any of the surface soil samples. SVOCs were detected above screening levels in all surface soil samples. PAHs accounted for most of the SVOC detections and the highest concentrations.

The following SVOCs exceeded RSLs: benzo(a)anthracene, in all samples (up to 14,000 µg/Kg); chrysene, in sample SS-06 (16,000 µg/Kg); bis(2-ethylhexyl)phthalate, in sample SS-05 (220,000 µg/Kg);

benzo(b)fluoranthene, in all samples (up to 17,000J µg/Kg); benzo(k)fluoranthene, in four samples (up to 4,100J µg/Kg); benzo(a)pyrene, in all samples (up to 13,000 µg/Kg); indeno(1,2,3-cd)pyrene, in all samples (up to 7,300 µg/Kg); and dibenzo(a,h)anthracene, in all samples (up to 2,100 µg/Kg).

Benzo(a)pyrene was the only SVOC that exceeded PADEP MSCs. Benzo(a)pyrene exceeded its PADEP residential MSC (2,500 µg/Kg) in samples SS-05 (2,900 µg/Kg), SS-06 (13,000 µg/Kg), SS-08 (2,600L µg/Kg), and SS-09 (4,800J µg/Kg). The industrial MSC (11,000 µg/Kg) was exceeded only in sample SS-06.

Inorganics

Arsenic, chromium, cobalt, lead, and mercury exceeded screening criteria. Arsenic exceeded its RSL (0.39 mg/Kg) in all surface samples. The highest arsenic concentration was found in sample SS-09 (11.7 mg/Kg). Chromium exceeded its RSL (39 mg/Kg) in one sample, SS-09 (52 mg/Kg). Cobalt exceeded its RSL (23 mg/Kg) in samples SS-05 (24 mg/Kg) and SS-08 (24.8 mg/Kg). Lead exceeded its RSL (400 mg/Kg) in all samples except SS-03, and its residential MSC (500 mg/Kg) in all samples except SS-03 and SS-10. The highest lead concentration, 6,350 mg/Kg, was found in sample SS-09. Lead exceeded its industrial MSC (1,000 mg/Kg) in six samples. Mercury exceeded its RSL (6.7 mg/Kg) in sample SS-02 (16.7 mg/Kg).

4.2.2 Subsurface Soils

Organics

There were no VOCs detected in the subsurface soil samples. SVOCs were detected above screening levels in all subsurface soil samples except SB-04-0203. As with surface soils, PAHs accounted for most of the SVOC detections and the highest concentrations.

The following SVOCs exceeded RSLs: naphthalene, in sample SB-08-0203 (22,000 µg/Kg); benzo(a)anthracene, in eight samples (up to 100,000 µg/Kg); chrysene, in sample SB-08-0203 (95,000 µg/Kg); benzo(b)fluoranthene, in seven samples (up to 94,000 µg/Kg); benzo(k)fluoranthene, in four samples (up to 32,000 µg/Kg); benzo(a)pyrene, in ten samples (up to 86,000 µg/Kg); indeno(1,2,3-cd)pyrene, in seven samples (up to 36,000 µg/Kg); and dibenzo(a,h)anthracene, in eight samples (up to 15,000 µg/Kg).

The following SVOCs exceeded PADEP residential MSCs: benzo(a)anthracene, in sample SB-08-0203 (100,000 µg/Kg); benzo(b)fluoranthene, in sample SB-08-0203 (94,000 µg/Kg); benzo(a)pyrene, in

samples SB-01-0203 (9,500 µg/Kg), SB-08-0203 (86,000 µg/Kg), and SB-09-0203 (12,000 µg/Kg); indeno(1,2,3-cd)pyrene, in sample SB-08-0203 (36,000 µg/Kg); and dibenz(a,h)anthracene, in sample SB-08-0203 (15,000 µg/Kg). PADEP industrial MSCs were exceeded by benzo(a)pyrene in samples SB-08-0203 and SB-09-0203, and by dibenzo(a,h)anthracene in sample SB-08-0203.

Inorganics

Arsenic, chromium, lead, and mercury levels exceeded screening criteria. Arsenic exceeded its RSL (0.39 mg/Kg) in all subsurface soil samples. The highest arsenic concentration was found in sample SB-08-0203 (10K mg/Kg). Chromium exceeded its RSL (39 mg/Kg) in one sample, SB-08-0203 (53 mg/Kg). Lead exceeded both its RSL (400 mg/Kg) and residential MSC (500 mg/Kg) in eight samples. The highest lead concentration, 2,170J mg/Kg, was found in sample SB-02-0203. Mercury exceeded its RSL (6.7 mg/Kg) in one sample, SB-02-0203 (14.3 mg/Kg). There were no exceedances of industrial MSCs.

4.2.3 Summary of Results

A review of the results indicates that levels of metals and PAHs in surface soil samples exceed EPA RSLs throughout the site. The most significantly widespread inorganic detected at the site was lead which exceeded the PADEP Residential MSC in 9 of 11 surface soil samples. When compared to the PADEP Industrial MSC, lead exceeded this benchmark in 6 of 11 samples. The most prevalent PAH, benzo(a)pyrene, was detected above EPA RSLs throughout the site surface soils. The concentrations exceeded the PADEP Residential MSC in 4 of 11 samples and the Industrial MSC in 1 of 11 samples. Figure 4-1 presents surface soil results compared to the screening criteria with EPA RSLs being the most conservative benchmark and PADEP Industrial MSCs the least conservative benchmark.

Subsurface sample results showed similar contaminant distribution as the surface soils. Metals (primarily lead) and/or PAHs (primarily benzo(a)pyrene) were detected above EPA RSLs in all 11 subsurface soil samples. PAHs above PADEP Residential MSCs were detected in 3 samples (SB-08 contained the highest levels of PAHs); 2 of these locations also exceeded Industrial MSCs. Lead exceeded PADEP Residential MSCs in 8 of 11 subsurface soil samples, but was below the Industrial MSC at all locations. Figure 4-2 presents subsurface soil results compared to the screening criteria.

Lead and PAHs are common contaminants found in urban settings as a result from burning fossil fuels, and in the case of lead, use of lead-based paint. The conditions at the site are not unusual for urban environments and may not be significantly different than other properties in the surrounding area; however, the possibility remains that past site activities may be a contributing factor to the levels of contamination detected at the site. During the Phase II sampling event, weathered asphalt was observed

in several of the test pits which could partially contribute to the PAHs detected in the samples. The elevated levels of lead and PAHs at the site may present potential adverse health risks as determined by results above screening criteria.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The Etech team has performed this Phase II ESA for the LRGI site located at Mt. Vernon Street and Ridge Avenue in Philadelphia, Pennsylvania in accordance with the scope and limitations of ASTM Standard Practices for Environmental Site Assessments: Phase II Process E-1903-97(2002). The Phase II ESA was designed to evaluate surface and shallow subsurface soil contamination at the site.

Based on the planned future use of the site as a community garden, which could result in direct exposure to possible contaminants from past operations and/or other man-made activities common to urban environments, sample results were initially compared to residential screening criteria as a conservative evaluation. Results showed elevated levels of inorganics (primarily lead) and several PAHs in surface and subsurface (2 to 3 feet below ground surface) soils in the majority of sample locations. A comparison to industrial use benchmarks indicated less widespread contamination; however, metals and some PAHs still exceeded these criteria. Six surface soil locations (lead/PAHs) and 3 subsurface soil locations (PAHs only) exceeded PADEP Industrial MSCs. It should be noted that no imminent threats were observed during the Phase II ESA.

Lead and PAHs are common contaminants found in urban settings as a result from burning fossil fuels, and in the case of lead, use of lead-based paint. Because sample results are not unusual for urban environments, the conditions at the site may not be significantly different than other properties in the surrounding area; however, contribution from past activities cannot be ruled out. The elevated levels of lead and PAHs at the site may present potential adverse health risks as determined by results above screening criteria. These screening criteria are based on exposure scenarios that will likely differ from that determined by a site-specific risk assessment that considers the intended future land use scenarios.

Based on the future use of the site, where direct contact with site contaminants are likely, particularly during preparation of the site and construction of the community garden, it is recommended that a site-specific risk assessment be prepared to evaluate health risks to potentially exposed populations at the site. The risk assessment should consider a variety of exposure scenarios and health risks to affected populations based on future use of the site as a community garden. The samples collected during the Phase II ESA are believed sufficient for use in the risk assessment, and additional sampling or other data collection activities are not likely required. Results of the risk assessment will be used to determine if remedial actions are needed at the site. If results of the risk assessment determine that remedial actions are required, the available data would be used to evaluate potential remedial alternatives on a technical and cost basis. This evaluation is also known as a Phase III ESA which would be performed, if needed, after the risk assessment is completed.

6.0 QUALIFICATIONS AND STATEMENT OF ENVIRONMENTAL PROFESSIONAL

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR Section 312.10.

I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Andrew Frebowitz
Project Manager

REFERENCES

ASTM, 2002. Standard Practices for Environmental Site Assessments: Phase II Process E-1903-97.

Etech (Etech Environmental and Safety Solutions, Inc.), 2008a. Phase I Environmental Site Assessment for the Lemon Ridge Garden, Inc. Site. September.

Etech, 2008b. Sampling and Analysis Plan for a Phase II Environmental Site Assessment for the Lemon Ridge Garden, Inc. Site. December.

PADER (Pennsylvania Department of Environmental Resources), 2001. Medium Specific Concentrations of Inorganic and Organic Regulated Substances in Soil, PADEP Land Recycling and Environmental Remediation Standards Act. November.

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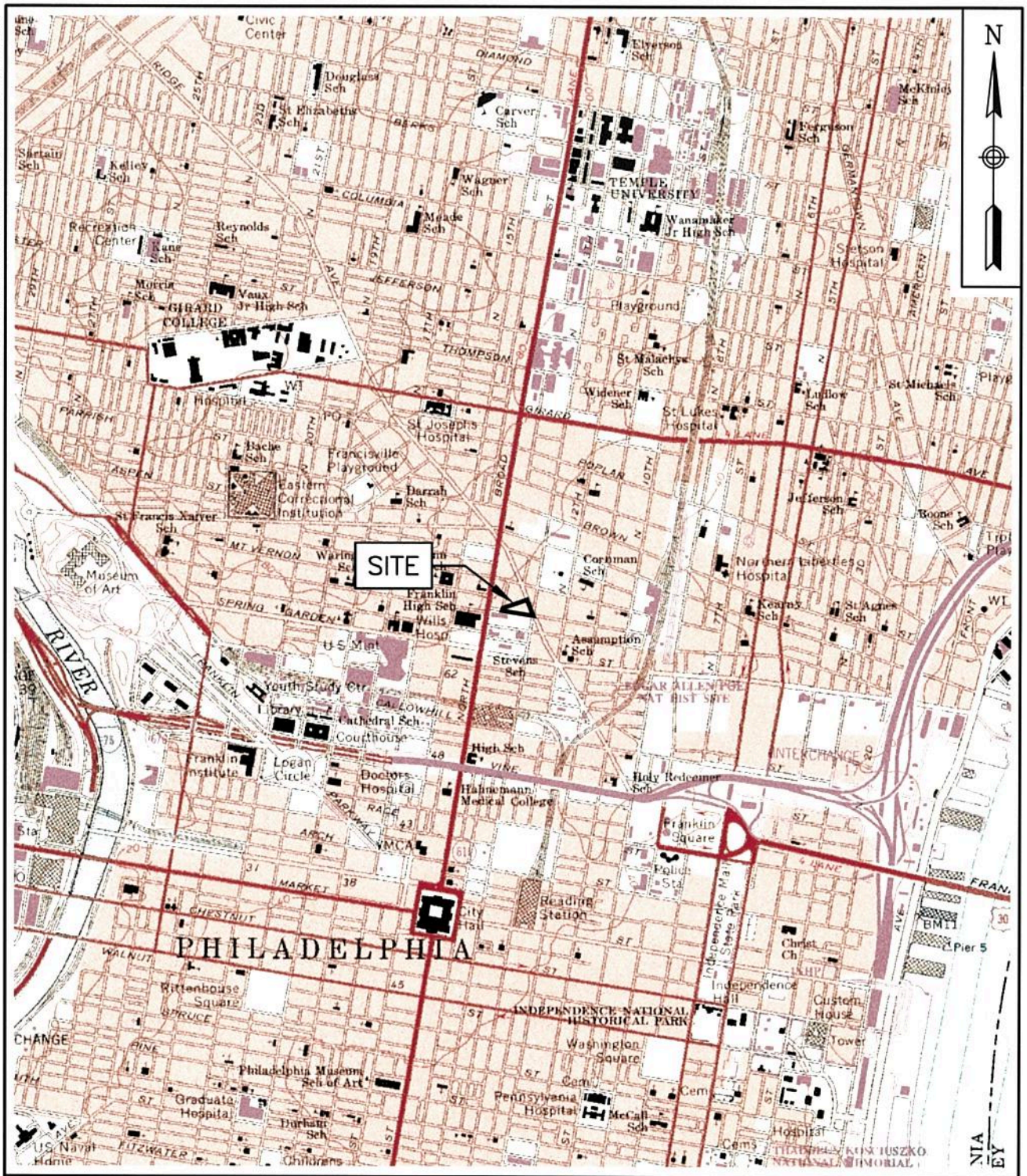

SOURCE:
PA U.S.G.S. 7.5 MINUTE QUADRANGLE MAP, PHILADELPHIA

TETRA TECH NUS, INC.

SITE LOCATION MAP
LEMON RIDGE GARDEN SITE
PHILADELPHIA, PENNSYLVANIA

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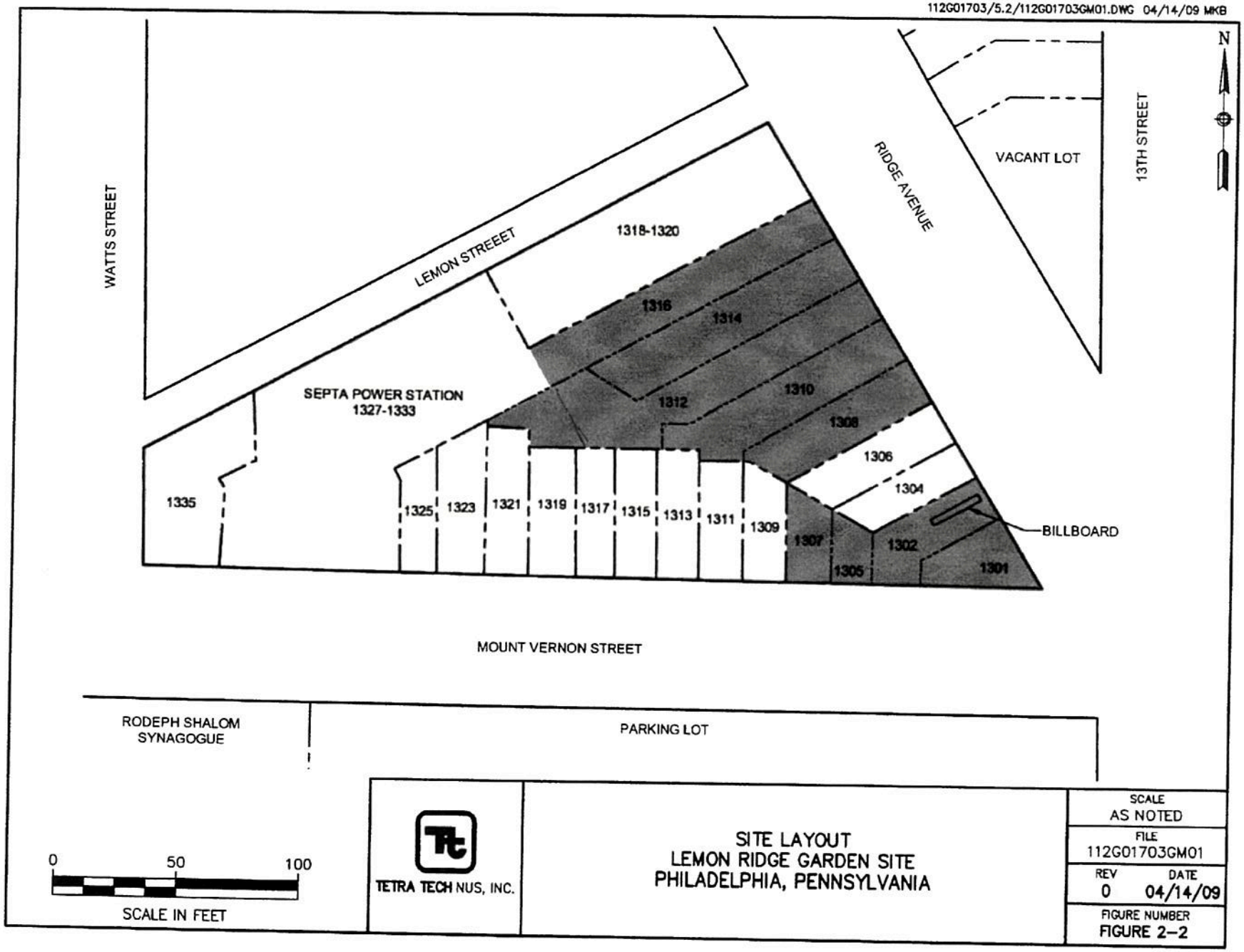
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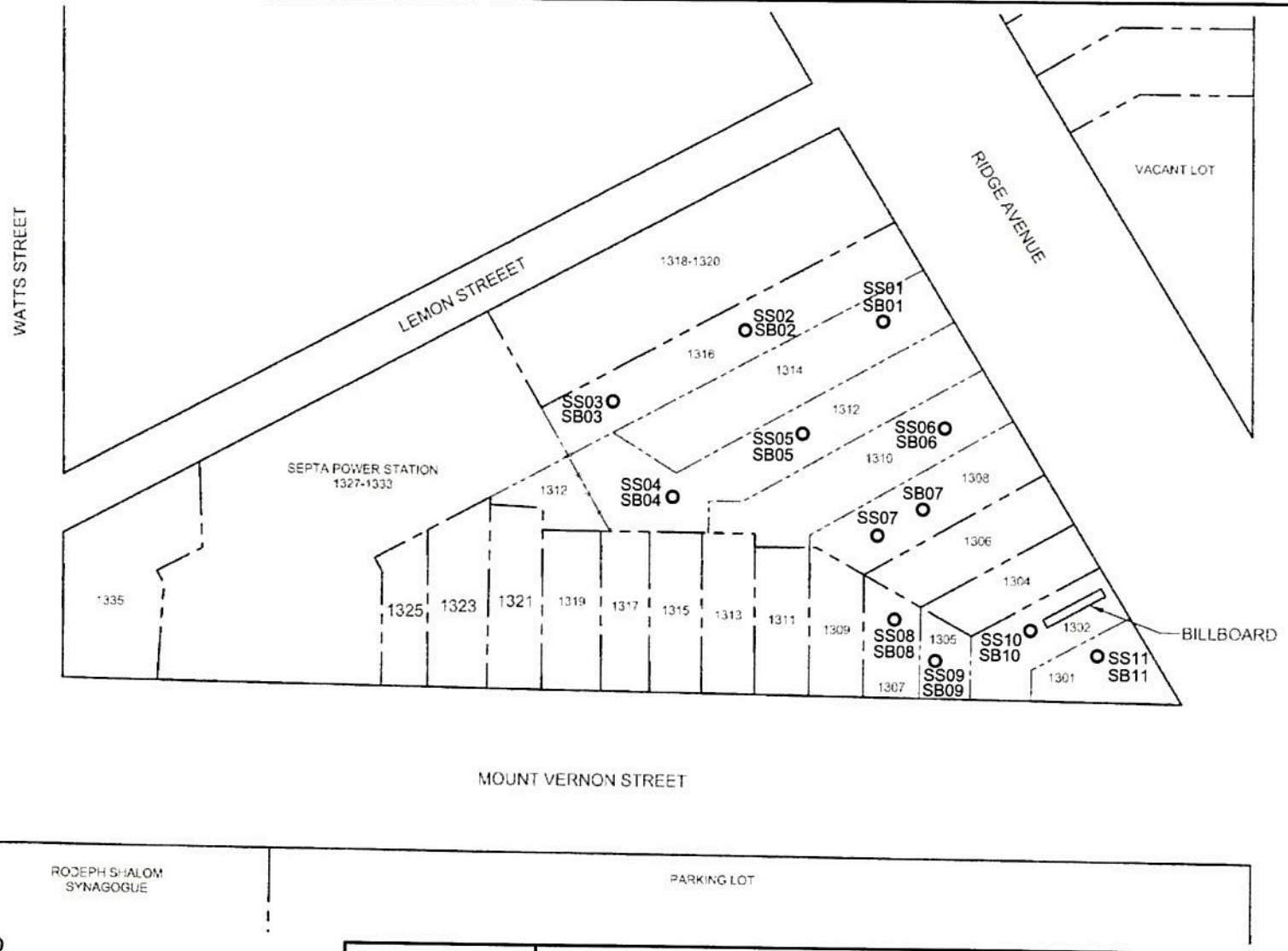


LEGEND

O SOIL SAMPLE LOCATION
SS: SURFACE SOIL
SB: SUBSURFACE SOIL

0 50 100

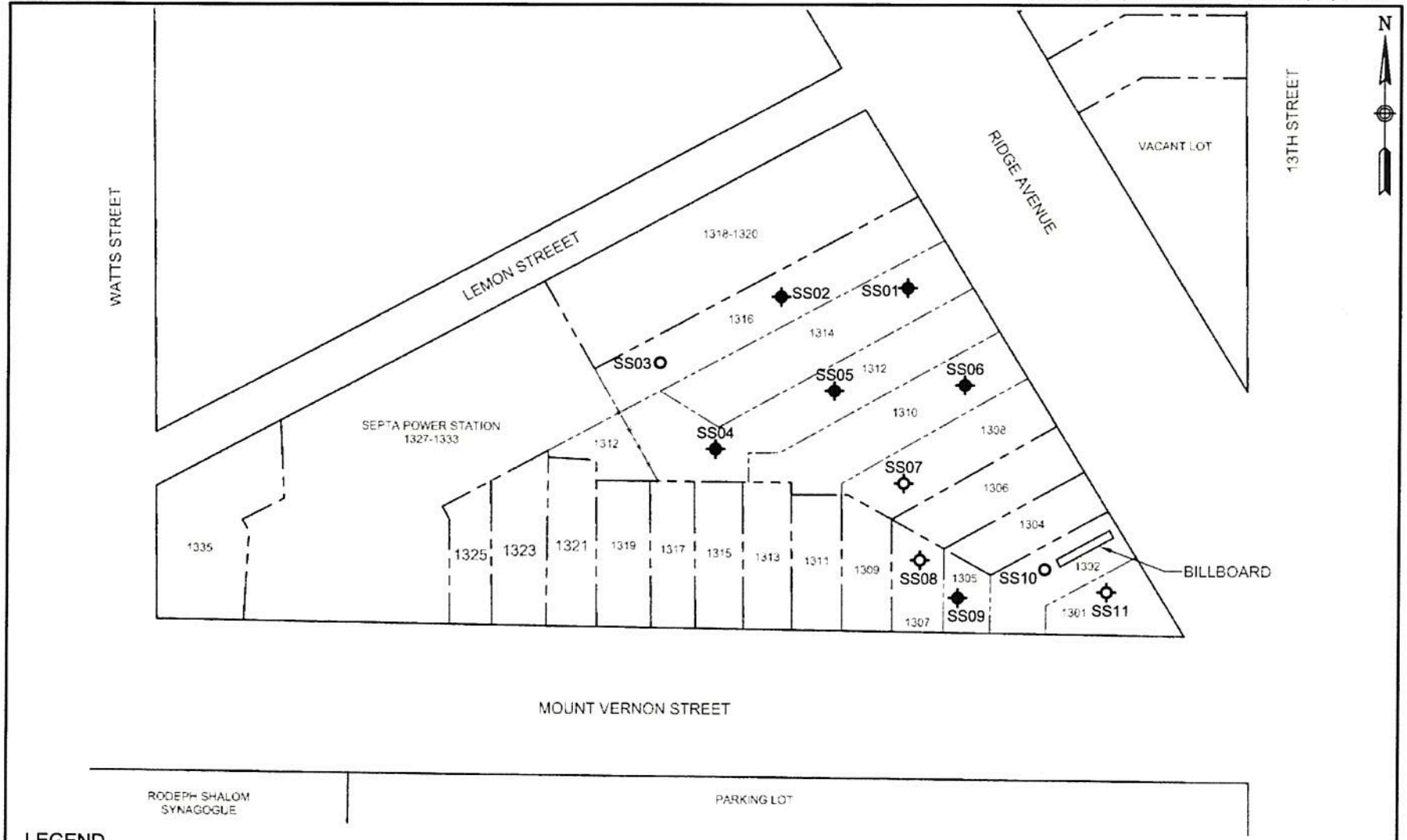
SCALE IN FEET

TETRA TECH NUS, INC.

SOIL SAMPLE LOCATION MAP
LEMON RIDGE GARDEN SITE
PHILADELPHIA, PENNSYLVANIA

SCALE	AS NOTED
FILE	112G01703GM01
REV	0
DATE	02/04/09
FIGURE NUMBER	FIGURE 3-1

112G01703/7.1/112G01703GM02-1.DWG 02/05/09 MKB



LEGEND

- EXCEEDS EPA RSL
- EXCEEDS PADEP RESIDENTIAL MSC
- EXCEEDS PADEP INDUSTRIAL MSC

0 50 100

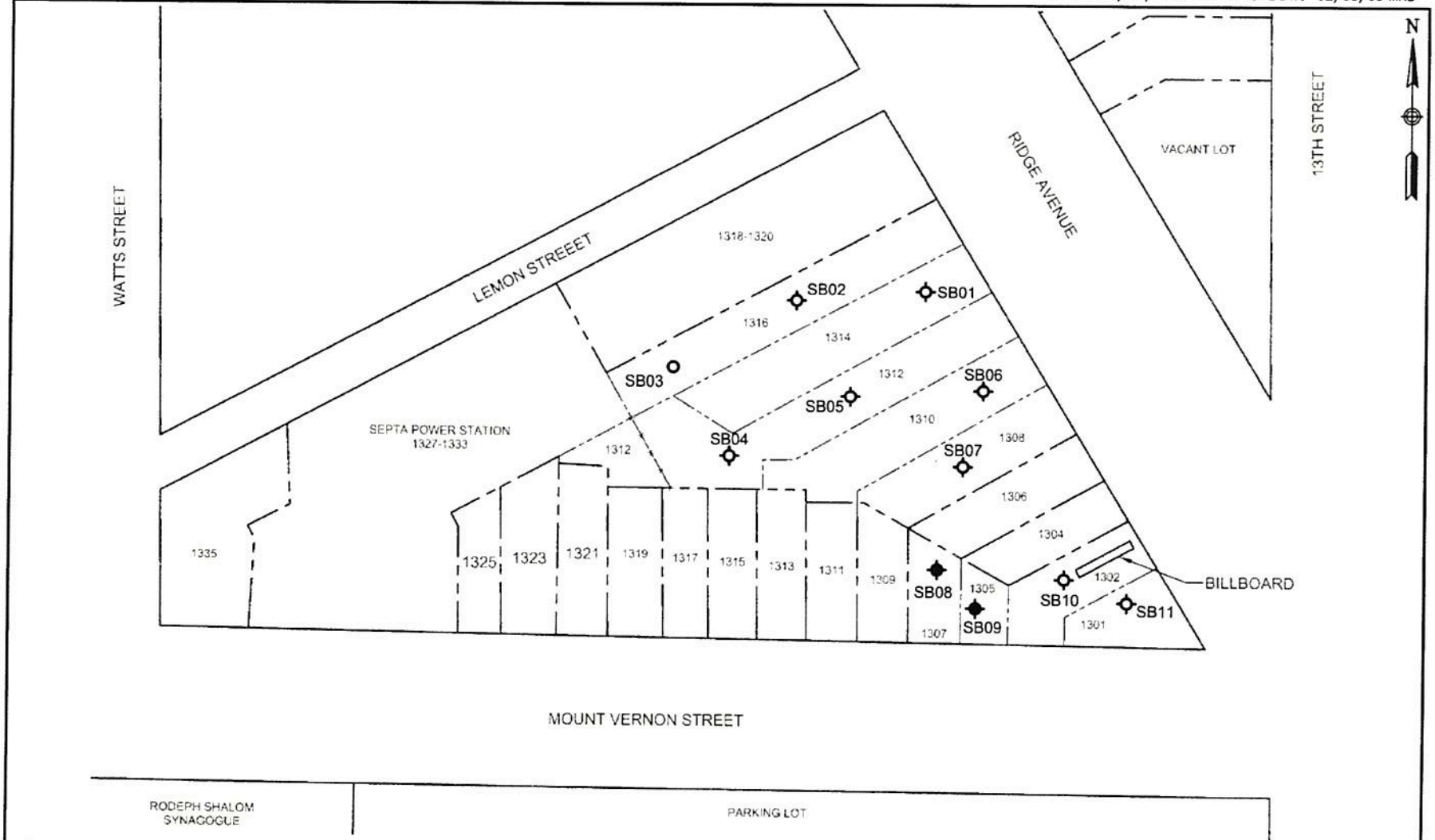
SCALE IN FEET

TETRA TECH NUS, INC.

SUMMARY OF SURFACE SOIL SAMPLE RESULTS
LEMON RIDGE GARDEN SITE
PHILADELPHIA, PENNSYLVANIA

SCALE	AS NOTED
FILE	112G01703GM02-1
REV	0
DATE	02/05/09
FIGURE NUMBER	FIGURE 4-1

112G01703/7.1/112G01703GM02-2.DWG 02/05/09 MKB



LEGEND

- EXCEEDS EPA RSL
- EXCEEDS PADEP RESIDENTIAL MSC
- EXCEEDS PADEP INDUSTRIAL MSC

0 50 100

SCALE IN FEET

TETRA TECH NUS, INC.

SUMMARY OF SUBSURFACE SOIL SAMPLE RESULTS
LEMON RIDGE GARDEN SITE
PHILADELPHIA, PENNSYLVANIA

SCALE	AS NOTED
FILE	112G01703GM02-2
REV	0
DATE	02/05/09
FIGURE NUMBER	FIGURE 4-2

APPENDIX A

PHOTOGRAPHS OF PHASE II ACTIVITIES

Photo 1. Test pit 1 (Samples SS-1/SB-1).

Photo 2. Test pit 2 (Samples SS-2/SB-2).

Photo 3. Test pit 3 (Samples SS-3/SB-3).

Photo 4. Test pit 4 (Samples SS4/SB-4).

Photo 5. Test pit 5 (Samples SS-5/SB-5).

Photo 6. Test pit 6(Samples SS-6/SB-6).

Photo 7. Test Pit 7 (Samples SS-7/SB-7).

Photo 8. (Samples SS-8/SB-8).

Photo 9. Test pit 9(Samples SS-9/SB-9).

Photo 10. Test Pit 10 (Samples SS-10/SB-10).

Photo 11. Test pit 11 (Samples SS-11/SB-11).

APPENDIX B

SAMPLE LOGS

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Gardens
Project No.: _____

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other: _____
[] QA Sample Type: _____

Sample ID No.: LRGT-SS-01
Sample Location: LRGT-SS-01
Sampled By: CM
C.O.C. No.: _____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0810	0-6"	Gray	Silty Sand with gravel and brick Frag
Method: Disposable Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC	8 oz Clear Glass Jar	1	
TAL Metals	8 oz Clear Glass Jar	1	

OBSERVATIONS / NOTES:

PID Readings Above background None

Fill Material encountered No 2 modified and Brick Fragments

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Gardens
Project No.: _____

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other: _____
[] QA Sample Type: _____

Sample ID No.: LRGE-SS-02
Sample Location: LRGE-SS-02
Sampled By: CM
C.O.C. No.: _____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0825	0-6"	Gray	Silty sand with Gravel
Method: Disposable Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC	8 oz Clear Glass Jar	1	
TAL Metals	8 oz Clear Glass Jar	1	

OBSERVATIONS / NOTES:

PID Readings Above background None

Fill Material encountered No. 2 modified gravel

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Gardens
Project No.:

Sample ID No.: LRGI-SS-03
Sample Location: LRGI-SS-03
Sampled By: CW
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0850	0-6"	Red Brown	Silty Sand with Brick and Gravel
Method: Disposable Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC	8 oz Clear Glass Jar	1	
TAL Metals	8 oz Clear Glass Jar	1	

OBSERVATIONS / NOTES:

PID Readings Above background None

Fill Material encountered Brick Fragments

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Gardens
Project No.: _____

[X] Surface Soil
[] Subsurface Soil
[√] Sediment
[] Other: _____
[] QA Sample Type: _____

Sample ID No.: LRGI-SS-04
Sample Location: LRGI-SS-04
Sampled By: CM
C.O.C. No.: _____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0915	0-6"	Dark Brown	silty sand with gravel and glass fragments
Method: Disposable Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	9	
TCL SVOC	8 oz Clear Glass Jar	2	
TAL Metals	8 oz Clear Glass Jar	2	

OBSERVATIONS / NOTES:

PID Readings Above background None

Fill Material encountered Glass fragments and gravel

MS/MSD completed at this location

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Lemon Ridge Gardens
Project No.: _____

Sample ID No.: LRG-SS-05
Sample Location: LRG-SS-05
Sampled By: CM
C.O.C. No.: _____

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other: _____
[] QA Sample Type: _____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0940	0-6"	Dark Brown	Silty sand with gravel and brick fragments
Method: Disposable Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC	8 oz Clear Glass Jar	1	
TAL Metals	8 oz Clear Glass Jar	1	

OBSERVATIONS / NOTES:

PID Readings Above background None

Fill Material encountered Gravel and Brick Fragments

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Gardens
Project No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SS-06
Sample Location: LRGI-SS-06
Sampled By: CW
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1005	0-6"	Red Brown	Silty Sand with Brick Fragments, gravel and Ceramic Pieces
Method: Disposable Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC	8 oz Clear Glass Jar	1	
TAL Metals	8 oz Clear Glass Jar	1	

OBSERVATIONS / NOTES:

PID Readings Above background None

Fill Material encountered Gravel Brick Frag and Ceramics

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Gardens
Project No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SS-07
Sample Location: LRGI-SS-07
Sampled By: CM
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1025	0-6"	Orange Brown	Silty Sand with brick Fragments gravel and glass
Method: Disposable Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	6	
TCL SVOC	8 oz Clear Glass Jar	2	
TAL Metals	8 oz Clear Glass Jar	2	

OBSERVATIONS / NOTES:

PID Readings Above background None

Fill Material encountered Brick fragments, gravel and Glass

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.: LRGI-SS-12 Assigned Time = 1525

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Garden, Inc. Site
Project No.: 01703

Sample ID No.: LRGI-SS-08
Sample Location: SS-08
Sampled By: DW
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1330	0-6"	Dark BROWN	SANDY SILT, some Brick fragments, MOIST
Method: Disposable trowel			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 gram EnCore sampler	3	
TCL SVOC	8 oz. jar	1	
TAL Metals	8 oz. jar	1	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Donald W Laden

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Garden, Inc. Site
Project No.: 01703

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SS-09
Sample Location: SS 09
Sampled By: DW
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/09	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1155	0-6"	BROWN	SANDY SILT, MOIST
Method: Disposable Trowel			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):			N/A	

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 gram EnCore sampler		
TCL SVOC	8 oz. jar		
TAL Metals	8 oz. jar		

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Donald W Haber

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Garden, Inc. Site
Project No.: 01703

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SS-10
Sample Location: SS-10
Sampled By: DW
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1220	0 - 6"	BROWN	SANDY SILT, Moist
Method: Disposable Trowel			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):			N/A	

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 gram EnCore sampler	3	
TCL SVOC	8 oz. jar	1	
TAL Metals	8 oz. jar	1	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Donald Whalen

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Garden, Inc. Site
Project No.: 01703

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SS-11
Sample Location: SS-11
Sampled By: PW
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1300	0-6"	Dark BROWN	SANDY SILT, some plant roots, Moist
Method: Disposable Trowel			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):			N/A	

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 gram EnCore sampler		
TCL SVOC	8 oz. jar		
TAL Metals	8 oz. jar		

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Donald Wheeler

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Garden, Inc. Site
Project No.: 01703

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SB01-0203
Sample Location: SB01
Sampled By: DW
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0845	2'-3'	BROWN to GRAY	SILTY SAND, some Brick frags, fine gravel, concrete fragments. MOIST
Method: Disposable Trowel			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):			N/A	

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 gram EnCore sampler	3	
TCL SVOC	8 oz. jar	1	
TAL Metals	8 oz. jar	1	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Donald Wlaber

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Lemon Ridge Garden, Inc. Site
Project No.: 01703

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SB02-0203
Sample Location: SB02
Sampled By: DW
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0740	2'-3'	DARK BROWN-DARK GRAY	SILTY SAND and Fine Gravel, some BRick fragments MOIST
Method: Disposable Trowel			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):			N/A	

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 gram EnCore sampler	3	
TCL SVOC	8 oz. jar	1	
TAL Metals	8 oz. jar	1	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Donald Whalen

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Garden, Inc. Site
Project No.: 01703

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SB03-0203
Sample Location: SB03
Sampled By: DW
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0900	2'-3'	BROWN	CLAYEY SILT MOIST
Method: Disposable Trowel			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):			N/A	

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 gram EnCore sampler	3	
TCL SVOC	8 oz. jar	1	
TAL Metals	8 oz. jar	1	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Donald Whalen

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: Lemon Ridge Garden, Inc. Site
Project No.: 01703

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SB04-0203
Sample Location: SB04
Sampled By: DW
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0920	2'-3'	Reddish BROWN	SILTY SAND, SOME CLAY MOIST
Method: Disposable Trowel			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):			N/A	

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 gram EnCore sampler		
TCL SVOC	8 oz. jar		
TAL Metals	8 oz. jar		

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Donald Whalen

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Lemon Ridge Garden, Inc. Site
Project No.: 01703

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SB05-0203
Sample Location: SB05
Sampled By: DW
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0950	2'-3'	BROWN	SANDY SILT MOIST
Method: Disposable Trowel			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):			N/A	

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 gram EnCore sampler	6	
TCL SVOC	8 oz. jar	2	
TAL Metals	8 oz. jar	2	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.: FD 01

Signature(s):

Donald W Helen

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Lemon Ridge Garden, Inc. Site
Project No.: 01703

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SB06-0203
Sample Location: SB06
Sampled By: DW
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 12/22/08 Time: 1020 Method: Disposable Trowel Monitor Reading (ppm): 0.2	2'-3'	BROWN	SILTY SAND, some Brick fragments and fine GRAVEL MOIST

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):			N/A	

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 gram EnCore sampler	3	
TCL SVOC	8 oz. jar	1	
TAL Metals	8 oz. jar	1	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Donald Wheeler

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Garden, Inc. Site
Project No.: 01703

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SB07-0203
Sample Location: SB07
Sampled By: DW
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:	2'-3'	BROWN	SANDY SILT MOIST
Method: Disposable Trowel			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):			N/A	

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 gram EnCore sampler	3	
TCL SVOC	8 oz. jar	1	
TAL Metals	8 oz. jar	1	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Donald W Haber

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Lemon Ridge Garden, Inc. Site
Project No.: 01703

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SB08-0203
Sample Location: SB08
Sampled By: DW
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1125	2'-3'	BROWN	SILTY SAND, some BRICK fragments; MOIST
Method: Disposable Trowel			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):			N/A	

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 gram EnCore sampler	3	
TCL SVOC	8 oz. jar	1	
TAL Metals	8 oz. jar	1	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Donald Wheeler

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Garden, Inc. Site
Project No.: 01703

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SB09-0203
Sample Location: SB09
Sampled By: DW
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1140	2'-3'	BROWN-GRAY	SILTY SAND, some Brick Fragments and Fine Gravel, MOIST
Method: Disposable Trowel			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):			N/A	

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 gram EnCore sampler	3	
TCL SVOC	8 oz. jar	1	
TAL Metals	8 oz. jar	1	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Donald W Hale

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Garden, Inc. Site
Project No.: 01703

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SB10-0203
Sample Location: SB10
Sampled By: DW
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1210	2'-3'	BROWN to DARK GRAY	SANDY SILT, some CLAY, some fine Gravel and Brick fragments, MOIST
Method: Disposable Trowel			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):			N/A	

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 gram EnCore sampler	3	
TCL SVOC	8 oz. jar	1	
TAL Metals	8 oz. jar	1	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Donald Whalen

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: Lemon Ridge Garden, Inc. Site
Project No.: 01703

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: LRGI-SB11-0203
Sample Location: SB11
Sampled By: DW
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 12/22/08	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1245	2'-3'	BROWN	SILTY SAND and BRICK Fragments, MOIST to WET
Method: Disposable trowel			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):			N/A	

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 gram EnCore sampler	3	
TCL SVOC	8 oz. jar	1	
TAL Metals	8 oz. jar	1	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Donald Wheeler